

WHAT IS CLAIMED IS:

1. A server computer operable to process requests sent by a plurality of client processes executing on a plurality of client computers, the server computer comprising:

5 a first memory storing program instructions;

a first processor coupled to the first memory;

wherein the first processor is operable to execute program instructions stored in the first memory to implement a manager service;

wherein the manager service is operable to receive the requests sent by the

10 a plurality of processes executing on the plurality of client computers, wherein each request includes a request to acquire access to a data object from a plurality of data objects;

wherein the manager service is operable to respond to the requests by coordinating access rights for the plurality of data objects such that, at any given time, one of the following conditions is met for each data object:

15 a) One or more client processes currently have read access rights to the data object and no client processes currently have write access rights to the data object; or
b) One client process currently has write access rights to the data object and no other client process currently has read or write access rights to the data object.

20 2. The system of claim 1 further comprising:

a backup computer coupled to the server computer, wherein the backup computer includes a second memory storing program instructions and a second processor coupled to the second memory;

wherein the second processor is operable to execute program instructions stored in
25 the second memory to implement a backup manager service;

wherein the manager service is operable to maintain state information regarding which client processes hold which access rights to which data objects;

wherein the manager service is operable to communicate with the backup manager service;

wherein the backup manager service is operable to maintain a mirror of the state information maintained by the manager service.

3. The system of claim 2,

5 wherein, in the event that the manager service becomes inaccessible, the backup manager service is operable to become the manager service.

4. The system of claim 1, wherein the data objects comprise one or more of:

10 HTTP session data;

I10P session data; and

a component having callable methods.

5. The system of claim 1,

15 wherein the manager service is operable to grant to a first client process access rights for a first data object in a first mode;

wherein said granting the access rights in the first mode comprises granting the access rights such that the first client process is not required to communicate with the manager service to release the access rights.

20 6. The system of claim 5,

wherein the manager service is operable to communicate with the first client process to reclaim the access rights in response to a request from a second client process to acquire access rights for the first data object.

25 7. The system of claim 1,

wherein the plurality of data objects are stored on one of the client computers.

8. A distributed system operable to coordinate access to shared data, the system comprising:

a plurality of client computers;

5 wherein the client computers execute client processes operable to send requests to a manager service to acquire access rights for accessing data objects stored on a first computer;

wherein the manager service is operable to respond to the requests sent by the client processes to coordinate access rights for the data objects such that, at any given time, one of the following conditions is met for each data object:

10 a) One or more client processes currently have read access rights to the data object and no client processes currently have write access rights to the data object; or

b) One client process currently has write access rights to the data object and no other client process currently has read or write access rights to the data object.

15 9. The system of claim 8,

wherein the manager service executes on one of the client computers.

10. The system of claim 8, further comprising:

a server computer coupled to the client computers;

20 wherein the manager service executes on the server computer.

11. The method of claim 10,

wherein the first computer is the server computer.

25 12. The method of claim 8,

wherein the first computer is one of the client computers.

13. A method for coordinating access to a data object utilized in a distributed software application, the method comprising:

a first client computer sending a first request to a server computer to acquire access rights for accessing the data object;

5 the server computer granting the access rights to the first client computer in response to the first request; and

the first client computer accessing the data object.

14. The method of claim 13,

10 wherein said first client computer sending the first request to the server computer comprises the first client computer sending a request to the server computer to acquire read access rights for reading from the data object; and

wherein said first client computer accessing the data object comprises the first client computer reading from the data object.

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15. The method of claim 13,

wherein said first client computer sending the first request to the server computer comprises the first client computer sending a request to the server computer to acquire write access rights for writing to the data object; and

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wherein said first client computer accessing the data object comprises the first client computer writing to the data object.

16. The method of claim 13, further comprising:

the first client computer sending a second request to the server computer to release 25 access rights for the data object; and

the server computer reclaiming the access rights in response to the second request.

17. The method of claim 16,

wherein said first client computer sending the first request to the server computer comprises the first client computer sending a request to the server computer to acquire write access rights for writing to the data object;

5 wherein said server computer granting the access rights to the first client computer
in response to the first request comprises the server computer granting both read and
write access rights for the data object to the first client computer;

wherein said first client computer sending a second request to the server computer to release access rights for the data object comprises the first client computer sending a 10... request to the server computer to release write access rights for the data object;

wherein said server computer reclaiming the access rights in response to the second request comprises the server computer reclaiming the write access rights; and

wherein the first client computer still holds read access rights for the data object after said server computer reclaiming the write access rights.

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18. The method of claim 17, further comprising:

the first client computer sending a third request to the server computer to release read access rights for the data object; and

the server computer reclaiming the read access rights in response to the third request.

19. The method of claim 13,

wherein the data object is located on the client computer.

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20. The method of claim 13,

wherein the data object is located on the server computer.

21. The method of claim 13,

wherein the data object is located on computer coupled to the client computer.

22. The method of claim 13, further comprising:
the server computer receiving a request to begin coordinating access rights for the
data object, before said first client computer sending the first request to the server
computer to acquire access rights for accessing the data object; and

the server computer maintaining state information regarding which client computers hold access rights for the data object in response to said receiving the request to begin coordinating access rights.

10 23. The method of claim 13, further comprising:
the server computer interfacing with a backup computer to inform the backup
computer that the first client computer was granted access rights for the data object.

24. The method of claim 13,
15 wherein said first client computer accessing the data object comprises the first client computer calling an application programming interface (API) for accessing the data object;
wherein the API checks to ensure that the first client computer holds access rights for the data object before allowing the first client computer to access the data object.

20 25. The method of claim 13,
 wherein the data object comprises an executable component having one or more
 callable methods;
 wherein the first client computer is required to hold access rights for the
 executable component before being allowed to call the one or more methods.
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26. The method of claim 13,

wherein said first client computer sending the first request to the server computer comprises the first client computer sending a request to the server computer to acquire read access rights for reading from the data object;

5 wherein said server computer granting the access rights to the first client computer comprises the server computer granting read access rights to the first client computer;

wherein the method further comprises:

a second client computer sending a second request to the server computer to acquire read access rights for reading from the data object; and

10 the server computer granting read access rights to the second client computer in response to the second request.

27. The method of claim 13,

wherein said first client computer sending the first request to the server computer 15 comprises the first client computer sending a request to the server computer to acquire read access rights for reading from the data object;

wherein said server computer granting the access rights to the first client computer comprises the server computer granting read access rights to the first client computer;

20 wherein the method further comprises a second client computer sending a second request to the server computer to acquire write access rights for writing to the data object; and

wherein the server computer does not grant write access rights to the second client computer until the first client computer releases its read access rights for the data object.

25 28. The method of claim 13,

wherein said first client computer sending the first request to the server computer comprises the first client computer sending a request to the server computer to acquire write access rights for writing to the data object;

wherein said server computer granting the access rights to the first client computer comprises the server computer granting write access rights to the first client computer;

wherein the method further comprises a second client computer sending a second request to the server computer to acquire access rights for accessing the data object; and

5 wherein the server computer does not grant access rights to the second client computer until the first client computer releases its write access rights for the data object.

29. The method of claim 13, further comprising:

a second client computer sending a second request to the server computer to 10 acquire access rights for accessing the data object;

the server computer reclaiming the access rights from the first client computer in response to the second request;

the server computer granting access rights to the second client computer in response to the second request; and

15 the second client computer accessing the data object.

30. A method for coordinating access to a data object utilized in a distributed software application, the method comprising:

a first process executing on a first client computer calling a first method to acquire 20 access rights for accessing the data object;

the first client computer communicating with a server computer to acquire the access rights in response to said first process calling the first method;

the first process executing on the first client computer accessing the data object;

the first process executing on a first client computer calling a second method to 25 release the access rights; and

the first client computer releasing the access rights in response to said first process calling the second method, wherein said releasing the access rights does not comprise the first client computer communicating with the server computer.

31. The method of claim 30, further comprising:
 - the first process executing on the first client computer calling the first method again to re-acquire access rights for accessing the data object; and
 - the first client computer granting the access rights to the first process without communicating with the server computer.

32. The method of claim 30, further comprising:

10 a second process executing on a second client computer calling the first method to acquire access rights for accessing the data object, after said first process calling the second method to release the access rights;

15 the second client computer communicating with the server computer to acquire the access rights in response to said second process calling the first method; and

the server computer communicating with the first client computer to reclaim the access rights in response to said second client computer communicating with the server computer to acquire the access rights.

34. The system of claim 33,
wherein the manager service executes on one of the application server computers.

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